

BLINDNESS PREVENTION

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BLINDNESS PREVENTION. The importance of organized measures for the prevention of blindness may be appreciated when it is realized that through proper medical and surgical care, improved living conditions, and the use of safety devices, about three-fourths of the blindness in the United States can be prevented. Since the beginning of this work some twenty-five years ago there has been a steady growth in the formulation of national, state, and local programs to conserve vision. These include efforts to reduce accidents in industry, campaigns against disease, and improved health services for school children.

The early discovery and correction or treatment of ocular defects in children is a very important phase of sight conservation. Special efforts have therefore been made to provide facilities for examining the eyes of pre-school children and to improve the efficiency of the school-health program as it relates to ocular examinations. Recent studies indicate, however, that much remains to be done, as in many instances children with serious eye defects are not discovered. See **THE BLIND**.

Eye Accidents

About one-sixth of all blindness is caused by accidents, chiefly in industry. Metal-working, mining, woodworking, and the chemical industry are especially dangerous, and to a less extent poisoning from wood alcohol and other substances. Most of these industrial accidents can be prevented through the use of safety devices. Goggles may be used to protect the eyes from flying particles of metal or wood or from excessive heat, and exhaust and blower systems to carry off dust and fumes which are injurious to the eye. The proper labeling of poisons is an important safeguard of a different kind.

Among non-industrial accidents may be mentioned the piercing of the eye by knives,

scissors, or other sharp instruments, careless use of fireworks, and the breaking of glass in automobiles. A reduction in this type of accidental blindness is being effected by ordinances governing the use of fireworks, and especially by the use of non-shatterable glass in motor vehicles. Most automobile manufacturers now include safety glass as part of their standard equipment, and nine states have legislation making compulsory the use of such glass in certain types of passenger cars and public conveyances. Non-shatterable glass also has been perfected for use in spectacles, which will prevent much injury to eyes, particularly among children.

The United States Department of Labor assists in preventing blindness from industrial accidents by collecting statistics showing what proportion of such accidents involve the eye, and by making studies of occupations which are especially dangerous to vision. State departments of labor help through laws requiring the use of safety devices, and through inspection of hygienic and lighting facilities in factories. With the recent trend toward greater protection of the industrial worker, considerable legislation has been enacted to promote greater safety in working conditions. Little of this legislation, however, is directed specifically toward the protection of eyes; but most of it, by increasing general safety, helps to reduce the incidence of industrial blindness. The National Society for the Prevention of Blindness and the National Safety Council do much to prevent accidental blindness through lectures, traveling exhibits, and the distribution of literature.

Diseases Which Cause Blindness

About one-half of all blindness is caused by disease, either of the eye itself or of a general systemic nature. Most prevalent among specific ocular diseases are: cataract, optic atrophy, trachoma, ophthalmia neonata-

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torum (baby's sore eyes), and glaucoma. Venereal diseases, especially syphilis, are among the foremost systemic diseases responsible for blindness, with measles, scarlet fever, diphtheria, and meningitis as less frequent causes.

Attention has been directed recently to possible hereditary factors in blindness, and a research study is now under way at Harvard Medical School. Preliminary findings indicate that heredity is responsible for more blindness than has been supposed, and it has been suggested that anyone whose blindness has hereditary characteristics should undergo voluntary sterilization prior to marriage.

Perhaps the most spectacular evidence of the success of organized efforts for blindness prevention is the 75 per cent reduction in baby's sore eyes which has been effected during the past quarter century. This disease formerly was responsible for most blindness among children, but it is rapidly assuming a minor position. The change is due to legislation requiring the use of a prophylactic in the eyes of new-born babies. Most states now have laws either requiring every case to be reported to local health authorities, making compulsory the use of prophylactics in the eyes of all new-born children, providing such prophylactics free of charge, or a combination of these measures.

The medical profession, the National Society for the Prevention of Blindness, and other organizations interested in the conservation of sight have been instrumental in securing this legislation, assisted by an ever-increasing public opinion. The power of these forces was shown in the state of Illinois. In 1931 the governor of that state vetoed a bill compelling disinfection of the eyes of new-born infants. In 1933, however—after a bitter fight which attracted nation-wide attention—such a law was enacted.

A reduction in blindness from trachoma is being effected through treatment made available in clinics and special hospitals and through better methods of preventing the spread of the disease. The United States Public Health Service is especially active in co-operating with state and local boards of

health in providing treatment, and in maintaining a strict quarantine so that no immigrants suffering from the disease may enter the country.

Prevention of blindness from syphilitic infection is receiving increased attention, and recently six sections of the American Medical Association adopted resolutions upon this subject. The National Society for the Prevention of Blindness and the American Social Hygiene Association also adopted jointly a program to provide anti-luetic treatment for all syphilitic expectant mothers. Greater attention is being given in general to ocular diseases and to ocular hygiene by public health officials; and improved methods of treatment are being developed for controlling general diseases which sometimes result in blindness. A recent innovation which promises to have significant results is the employment of special medical social workers by eye hospitals and eye clinics. These workers maintain contact between the hospital and the patient, and through careful follow-up measures see that the ophthalmologists' recommendations are carried out. They also conduct educational work in the field of ocular hygiene and co-operate with other interested agencies.

Sight-Saving Classes

One of the major contributions toward conserving the vision of school children has been the establishment of special classes in public schools for children whose sight is seriously defective but who can still be taught by visual methods. Beginning in Boston and Cleveland about 1913 these classes have steadily increased until in May, 1934, they numbered 431. At first they were known as classes for the partially blind. This term was felt to be too negative, and finally the term "sight-saving classes" was chosen as best expressing the general aim. It is somewhat of a misnomer, however, for a considerable number of children enrolled in these classes have static eye conditions. With them, naturally, the problem of saving sight is not involved.

Fourteen states now make legal provision for the establishment and partial financial

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support of sight-saving classes in public schools. Up to the present time most of them are conducted in cities, thereby denying their benefits to the rural child. To overcome this difficulty it has been suggested that county classes be established where transportation facilities make such a procedure feasible, or that arrangements be made to have rural children with seriously defective vision enrolled in practice schools connected with teacher-training institutions. Many potential sight-saving class pupils now go to schools for the blind. This practice is deplored by most leaders in the blindness prevention field, for it is felt that in such schools partially seeing children are likely to be maladjusted educationally and socially. A few schools for the blind, however, are attempting to cope with this problem by establishing sight-saving classes—a more desirable practice than forcing partially seeing children to follow methods designed for the blind.

Sight-saving classes generally use rooms having the best available natural and artificial lighting conditions. Their equipment consists of adjustable seats, books in 24-point type, large maps in simplified detail, adequate blackboard space, and typewriters with large type. The plan generally followed is to have pupils recite in the regular grades and perform such work there as does not involve close use of the eyes, returning to the sight-saving classroom for study and other activities requiring vision. The teacher acts as a helper and guide, and occasionally student readers may be provided to read assignments from books not available in large type.

An essential feature of a sight-saving program is regular and efficient ocular supervision, usually by the local school ophthalmologist. While this is usually provided, there is reason to believe that in many instances its efficiency might be improved. It is important that the sight-saving class teacher have some knowledge of eye troubles so that she may co-operate intelligently with the ophthalmologist and school nurse.

Provision for pre-vocational and vocational guidance is an important feature. By this

means the teacher attempts to guide pupils into occupations where their limited vision will not be a handicap or result in a further loss of sight. Another task of the teacher is to train children in habits of ocular hygiene, otherwise much of the work of the special class may be lost when they leave school. Most sight-saving classes are in elementary schools, and it is vital that pupils know how to take care of their eyes properly if they enter high school.

Among its recommendations concerning partially seeing children the White House Conference on Child Health and Protection (1930) suggested that uniform standards of admission should be set up, more states should provide sight-saving classes, the opportunities of such classes should be extended to rural children, and better methods of guidance should be sought. Extensive research, both as to causes of blindness and as to materials and methods of instruction should also be undertaken.

Private Societies and Public Agencies

The National Society for the Prevention of Blindness is the only national organization concerned solely with this work. The Society has no state or local chapters, but in some states there are active local societies engaged in prevention of blindness work. This is especially true in Illinois, Maryland, and Louisiana which, in that order, have established state societies operating on independent budgets and rendering valuable services. The American Medical Association, American Social Hygiene Association, and other similar organizations are instrumental in aiding the program. The National Safety Council is active in promoting the use of safety devices in industry, and the National Society of Illuminating Engineers is responsible for directing the attention of school officials and factory owners to the need for more adequate lighting.

Most state commissions for the blind are interested directly or indirectly in prevention of blindness. In some states they have blindness prevention as one of their major functions, using methods similar to other organi-

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zations engaged in this work. Other commissions, when cases come to their attention, merely refer them to the proper authorities, and sometimes provide funds for glasses or treatment. In general there is close co-operation between the commissions and agencies concerned directly with the prevention of blindness.

While organized measures for the prevention of blindness in this country began entirely as a private undertaking, there is a rapidly growing sense of public responsibility in this field. In some respects it may be said that at present the work is fairly equally divided between public and private agencies, but the promotional work is still largely in private hands. It is probable that without the constant activity of private organizations to secure and enforce legislation, little progress would be made in the field of prevention of blindness.

Results of the Depression

While the depression has curtailed to some extent the funds available for promoting blindness prevention, there has nevertheless been a fairly consistent advance in the work. Despite the general reduction in all types of special classes in public schools, 14 new sight-saving classes were established in 1933, with 3 more in 1934 and prospects for 16 others. The employment of additional public health nurses under the Federal Civil Works Administration permitted work for blindness prevention to be carried on in areas where this otherwise would have been impossible. Six states benefited particularly from this form of assistance.

Training Requirements and Opportunities

The necessity for trained workers in this field has given rise to the establishment of

training courses for sight-saving-class teachers and for medical social eye workers. Courses of the former type have been held since 1921 at various teacher-training institutions with the co-operation of the National Society for the Prevention of Blindness. In 1934 there were 75 students enrolled in courses at the University of Chicago; State Teachers College, Buffalo; Teachers College, Columbia University; and the University of Cincinnati. A course for medical social eye workers was established at the Massachusetts Eye and Ear Infirmary in 1931, and a similar course is given under the auspices of Washington University, St. Louis. Thirteen graduates of these courses are now engaged actively in prevention of blindness work.

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